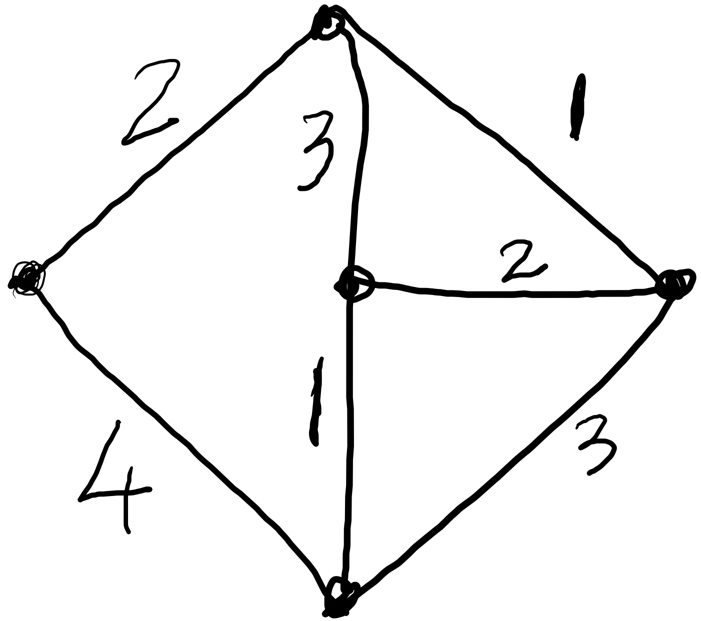

2
3
1
2
1
4
3

De Morgan's laws:

$$\neg(A \vee B) = (\neg A) \wedge (\neg B)$$

not (A or B) = (not A) and (not B)

$$\neg(A \wedge B) = (\neg A) \vee (\neg B)$$

not (A and B) = (not A) or (not B)

$\forall$ edge uv:

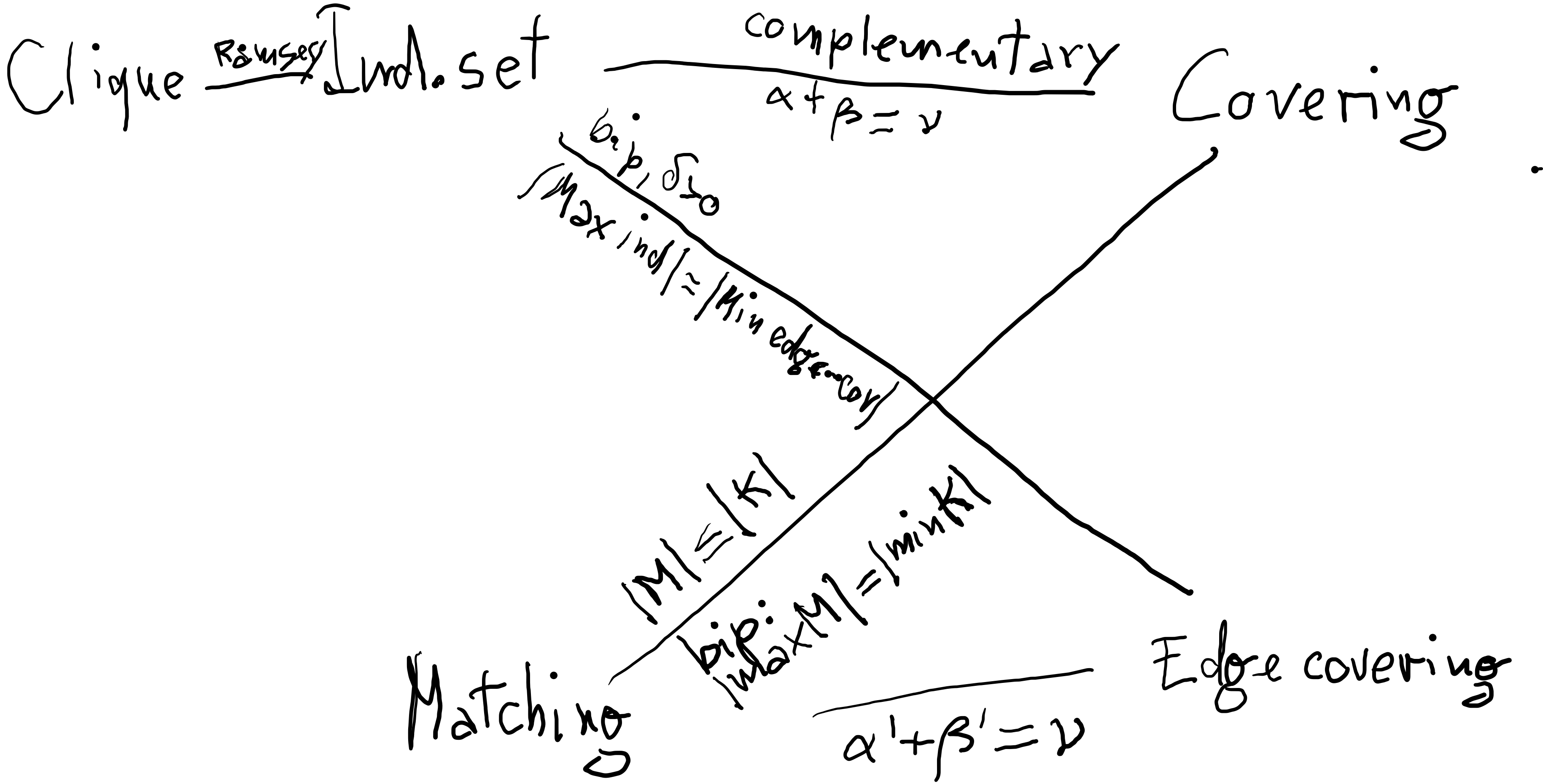
$$\neg\big((u \in S) \wedge (v \in S)\big) = \big(\neg(u \in S)\big) \vee \big(\neg(v \in S)\big) =$$

$$= \big((u \in V \setminus S) \vee (v \in V \setminus S)\big)$$

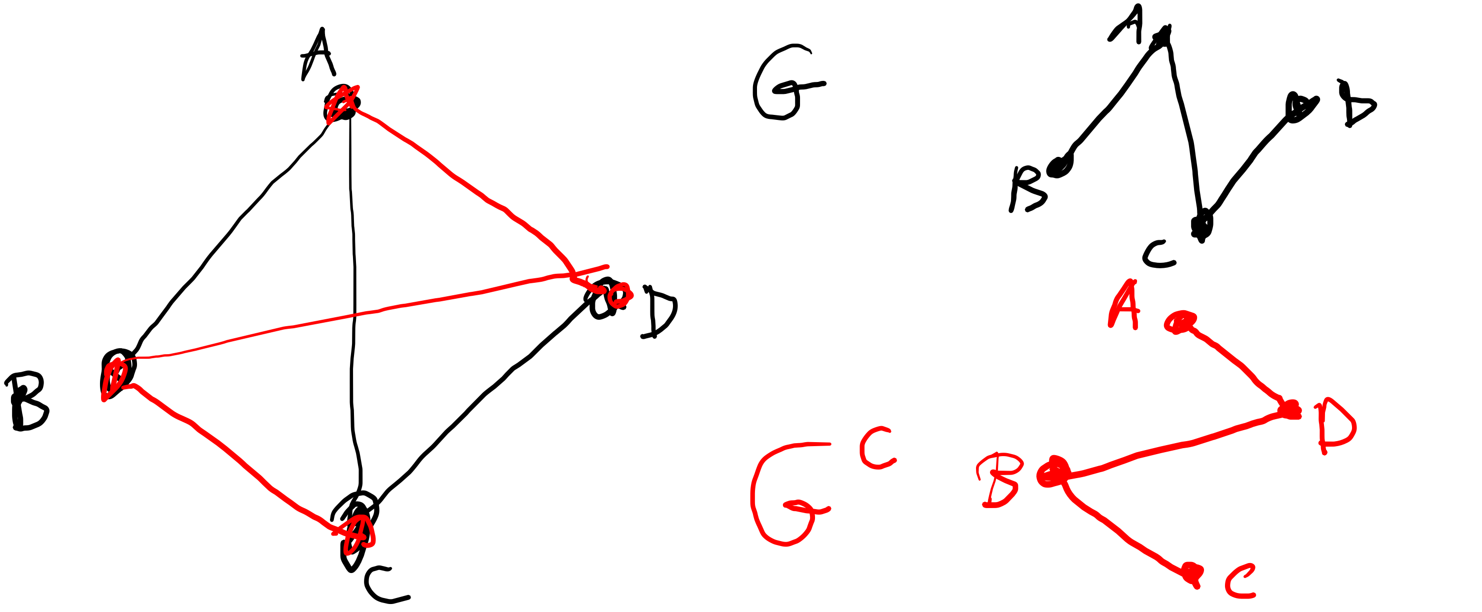
$$\gamma - \alpha \geq \beta \qquad \gamma \geq \alpha + \beta$$

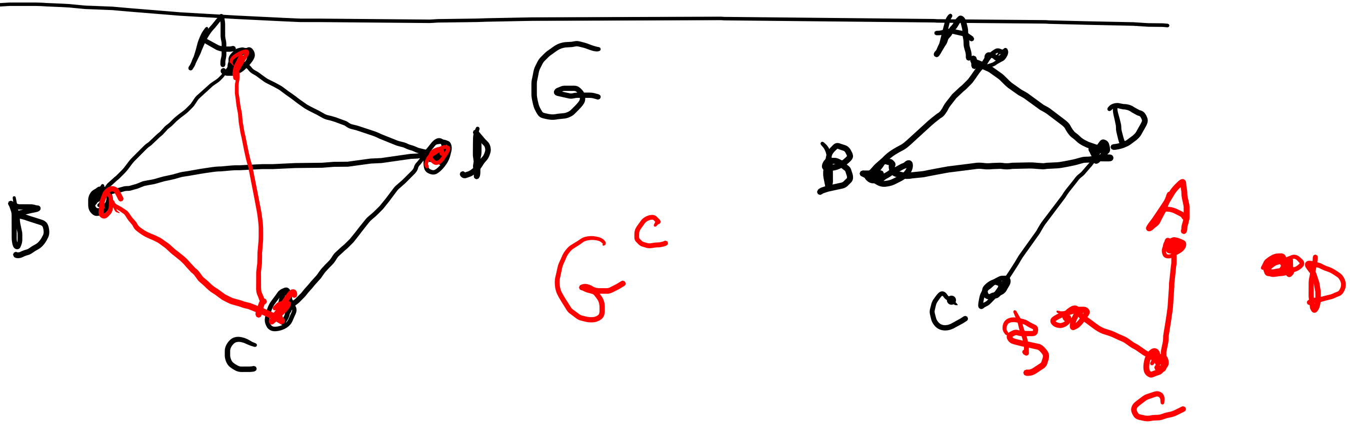
$$\gamma - \beta \leq \alpha \qquad \gamma \leq \alpha + \beta$$

$$\Rightarrow \gamma = \alpha + \beta$$



Clique
Ramsey
Ind. set
complementary
α+β=ν
Covering
bip, δ>0
|Max ind| = |Min edge-cov|
|M| ≤ |K|
bip: |max M| = |min K|
Matching
Edge covering
α'+β'=ν


A
B
C
D
G
G^c
A
B
C
D
A
B
C
D

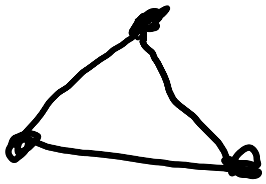

A
B
C
D
G
G^c
A
B
C
D
A
B
C
D

$r(3,4) = 9$ means:

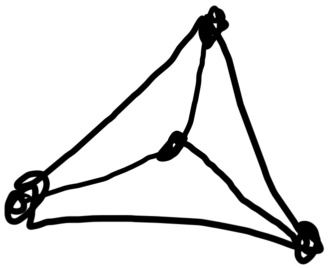
every graph with at least 9 vertices either has a clique of 3 or has an independent set of 4 vertices.

K_1

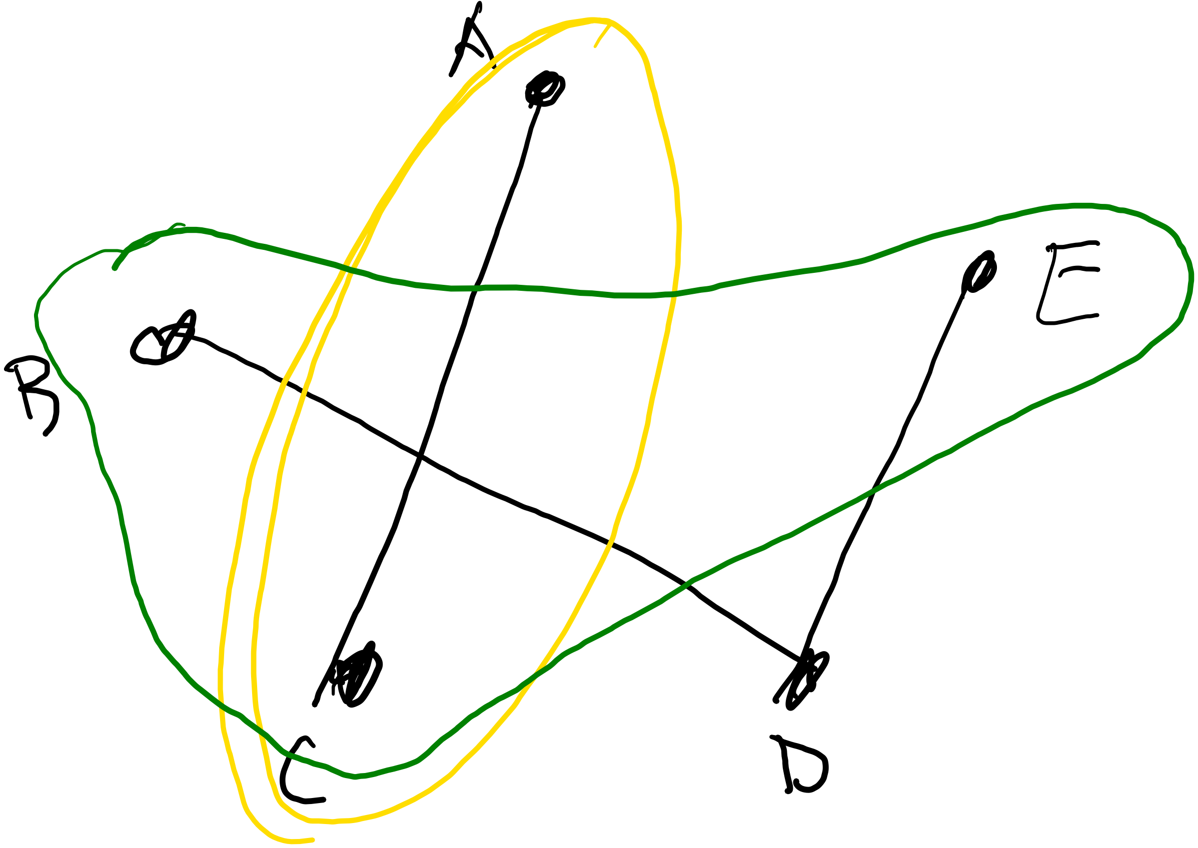
K_2



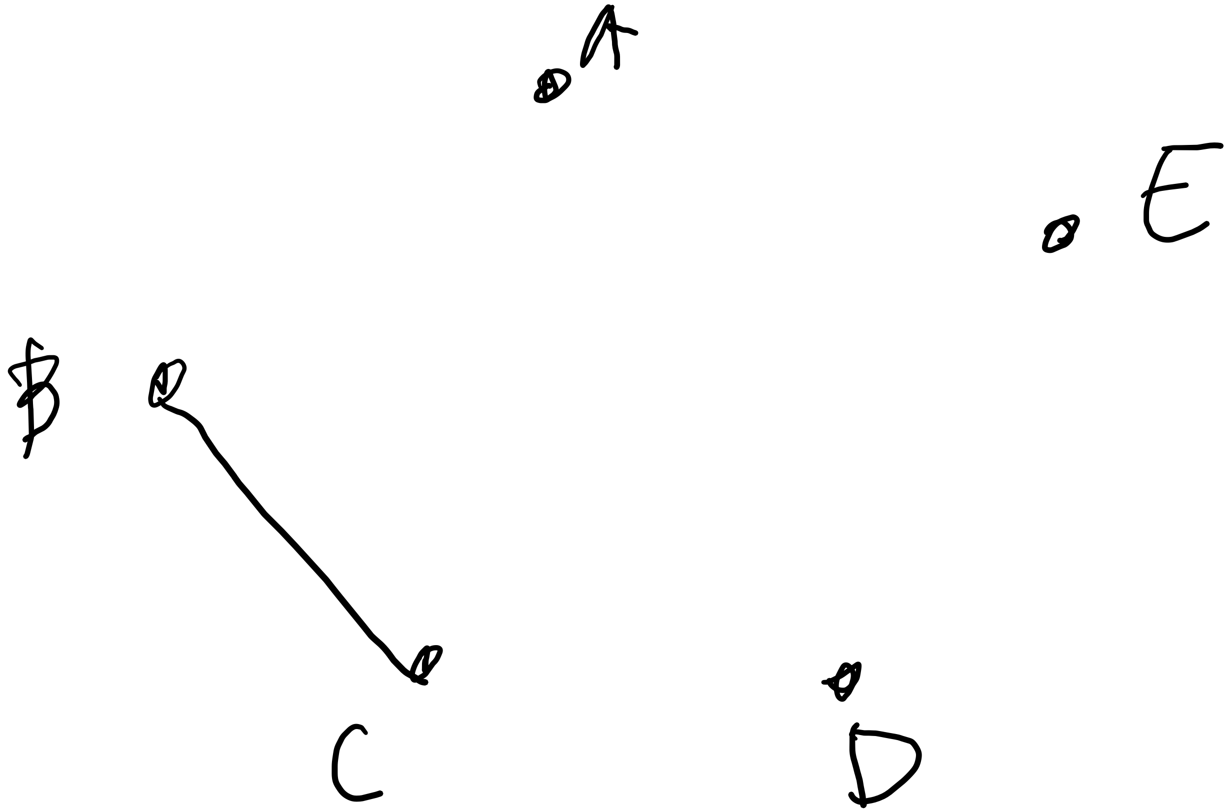
K_3



K_4



G


A
E
B
C
D